

January 20, 2003

--The present invention comprises fusion polypeptides with or without spacer amino acid linking groups. For example, two soluble CD39 domains can be linked with a linker sequence, such as (Gly)₄Ser(Gly)₅Ser (SEQ ID NO:32), which is described in United States Patent 5,073,627. Other linker sequences include, for example, GlyAlaGlyGlyAlaGlySer(Gly)₅Ser (SEQ ID NO:33), (Gly₄Ser)₂ (SEQ ID NO:34), (GlyThrPro)₃ (SEQ ID NO:35), and (Gly₄Ser)₃Gly₄SerGly₅Ser (SEQ ID NO:36). Alternatively, CD39 can be linked to another polypeptide (non-CD39) with or without a spacer amino acid linking group. As shown in Example 9, ThrSerSer or ThrSerSerGly (SEQ ID NO:37) linkers may be used to fuse IL2 residues to soluble CD39. For the expression of soluble CD39, the inventors have made the surprising and unexpected discovery that the fusion of 12 amino acids from the N-terminus of mature human IL2 to the solCD39 coding region, results in high levels of both expression and activity in the supernatants of transfected cells. Among the particularly preferred embodiments of the invention, therefore, are soluble CD39 polypeptides having an amino acid sequence SEQ ID NO:6 and nucleic acids, such as SEQ ID NO:5, that encode soluble CD39 polypeptides having an amino acid sequence SEQ ID NO:6.--

Please delete Pages 1 to 34 of the present Sequence Listing and insert Pages 1 to 30 of the new Sequence Listing (provided herewith) after Figure 24 of the application.

REMARKS

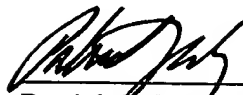
The description of the above-identified application has been amended to identify SEQ ID NOs as required under 37 C.F.R. §§1.821-1.825.

Attached hereto is a marked-up version of the changes made to the description by the current amendment. The attached page is captioned "Version with Markings to Show Changes Made".

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Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE**In the Specification**

Please replace the paragraph beginning at page 13, line 9, with the following rewritten paragraph:

--The present invention comprises fusion polypeptides with or without spacer amino acid linking groups. For example, two soluble CD39 domains can be linked with a linker sequence, such as (Gly)₄Ser(Gly)₅Ser (SEQ ID NO:32), which is described in United States Patent 5,073,627. Other linker sequences include, for example, GlyAlaGlyGlyAlaGlySer(Gly)₅Ser (SEQ ID NO:33), (Gly₄Ser)₂ (SEQ ID NO:34), (GlyThrPro)₃ (SEQ ID NO:35), and (Gly₄Ser)₃Gly₄SerGly₅Ser (SEQ ID NO:36). Alternatively, CD39 can be linked to another polypeptide (non-CD39) with or without a spacer amino acid linking group. As shown in Example 9, ThrSerSer or ThrSerSerGly (SEQ ID NO:37) linkers may be used to fuse IL2 residues to soluble CD39. For the expression of soluble CD39, the inventors have made the surprising and unexpected discovery that the fusion of 12 amino acids from the N-terminus of mature human IL2 to the solCD39 coding region, results in high levels of both expression and activity in the supernatants of transfected cells. Among the particularly preferred embodiments of the invention, therefore, are soluble CD39 polypeptides having an amino acid sequence SEQ ID NO:6 and nucleic acids, such as SEQ ID NO:5, that encode soluble CD39 polypeptides having an amino acid sequence SEQ ID NO:6.--